

No. J-11015/212/2014 -IA.II (M)
Government of India
Ministry of Environment, Forests & Climate Change
IA-II (Coal Mining) Division

Indira Paryavaran Bhawan,
Jorbagh Road,
New Delhi-110003

Dated: 20th November, 2014

To

The General Manager (Environment)
M/s The Singareni Collieries Co Ltd.,
Kothagudem P.O -507101
Telangana

Subject: Kistaram Opencast Project of (2.00 MTPA in ML area of 435.68 Ha; Latitude 17° 13' 14" to 17° 13' 57" and Longitude 80° 46' 55" to 80° 47' 28") M/s The Singareni Collieries co. Limited, located at dist. Khammam, Telangana – TOR reg.

Sir,

This is with reference to your letter no CRP/ENV/A/406/302 dated 02.07.2014 seeking for Terms of Reference for the **Kistaram Opencast Project of (2.00 MTPA in ML area of 435.68 Ha; Latitude 17° 13' 14" to 17° 13' 57" and Longitude 80° 46' 55" to 80° 47' 28") M/s The Singareni Collieries co. Limited, located at dist. Khammam, Telangana**

2. The proposal was considered by the 21st EAC held during 18th -19th September, 2014 and the proponent has informed that:

- i. The SCCL is a Government Company being a Joint undertaking of the Govt. of Telangana and Govt. of India having 51% and 49% equity respectively. The mining operations are spread over 4 district of Telangana viz., Adilabad, Karimnagar, Warangal and Khammam. The SCCL is operating 16 Opencast Mines and 32 Underground mines.
- ii. MoEF issued the Terms of Reference (ToR) for Kistaram Opencast Project vide Lr. No. J-11015/295/2009-IA (M), Dated 23.11.2009 for Production capacity of 2.00 MTPA in the ML area of 435.68 Ha. The project did not progress due to socio-political issues in view of State bifurcation and non-availability of Compensatory Afforestation land for the diversion of forestland involved in the project
- iii. Now, SCCL is proposing to take up the proposed Kistaram Opencast Project as the Forestland diversion application is under process at MoEF, New Delhi
- iv. The prescribed ToR is valid for a period of four years i.e. up to 22.11.2013 as per O.M No J-11013/41/2006-IA.II(I) dt. 22.03.2010
- v. The time limit for validity of ToR prescribed earlier is lapsed and there is no change in the project parameters. Hence, it is proposed to obtain fresh ToR with production capacity of 2.00 MTPA in ML area of 435.68 Ha)
- vi. It is a new opencast mine project.
- vii. The latitude and longitude of the project are 17° 13' 14" to 17° 13' 57" and 80° 46' 55" to 80° 47' 28" respectively.
- viii. There is no joint venture.
- ix. Coal Linkage: TGENCO, APGENCO.

Kistaram_OCP_TOR



- x. The land usage of the project will be as follows:

Land requirement – Activity wise:

Activity	Forest Land	Non-Forest Land	Total
Quarry area	200.72	27.30	228.02
External dump	57.73	94.25	151.98
Top soil dump (Temp)	13.98	0.78	14.76
Service Buildings	4.36	0.00	4.36
CHP & Stock yard	8.65	0.00	8.65
Safety Zone	0.00	27.91	27.91
Total	285.44	150.24	435.68

Pre-Mining:

Land Use Land Cover class		Area of Sub Class	
		Area in Ha	% of Usage
Forest Land		285.44	65.5
Agriculture		124.02	28.5
Single Crop land	59.22		
Fallow	38.20		
Plantation	26.59		
Surface Water		10.65	2.5
Built-Up Land		2.28	0.5
Waste Land		13.29	3.0
Total Area		435.68	100

Post- Mining:

Post Mining (Conceptual) Land use pattern of ML area (Ha.)					
Sl. No.	Description	Land Use Details (Ha.)			
		Plantation	water body	Other uses	Total
1	Top Soil dump	12.91	-	1.85	14.76
2	External OB dump	140.77	-	11.21	151.98
	Excavation (Backfilled)				



3(a)	area)	90.31	-	-	90.31
3(b)	Excavation (Void area)	-	137.71	-	137.71
4	Built up area / Infrastructure	2.35	-	2.01	4.36
5	CHP& Coal stock yard.	7.45	-	1.20	8.65
6.	Safety zone	18.66	9.25		27.91
	TOTAL	272.45	146.96	16.27	435.68

Core area:

SI. No	Description	Forest Land	Non-Forest Land	Total
1	Quarry including drain, bund etc., around Quarry	200.72	27.30	228.02
2	External Dumps including drain, toe wall etc around dumps: a) Top soil dump b) Hard OB dump	13.98 57.73	0.78 94.25	14.76 151.98
3	Service Buildings	4.36	0.00	4.36
4	Coal Handling Plant & Coal stock yard	8.65	0.00	8.65
5	Safety Zone	0.00	27.91	27.91
	Total	285.44	150.24	435.68

- xi. The total geological reserve is 24.05 MT. The mineable reserve 21.61 MT, extractable reserve is 21.16 MT. The per cent of extraction would be 89.85%.
- xii. The coal grade is G-7 & G11. The stripping ratio is 6.00 Cum/tonne. The average Gradient is 1 in 3.9 to 1 in 12. There will be 7 seams with thickness ranging from 0.29m to 8.72 m.
- xiii. The total estimated water requirement is 4200 m3/day. The level of ground water ranges from 0.85 m to 4.81 -m.
- xiv. The Method of mining would be Opencast.

- xv. There is two external OB dump with Quantity of 0.74 M.Cum (Top Soil) + 73.58 M .Cum (Hard OB) Mbcm in an area of 14.76 Ha.(Top Soil) + 151.98 Ha (Hard OB dump) with height of 120 meter above the surface level and One internal dump with Quantity of 0.27 M.Cum (Top Soil) + 54.99 M .Cum (Hard OB) in an area of 90.31 ha.
- xvi. The final mine void would be in 137.71 Ha with depth of 35 m. and the Total quarry area is 228.2 Ha. Backfilled quarry area of 90.31 Ha shall be reclaimed with plantation. A void of 137.71 ha with depth of 35 m which is proposed to be converted into a water body
- xvii. The **life of mine** is 13 Years.
- xviii. **Transportation:** Coal transportation in pit by Dumpers, Surface to Siding by Trucks and loading at siding by SILO into wagon.
- xix. There is **R & R** involved. There are 404 PAFs.
- xx. **Cost:** Total capital cost of the project is Rs. 242.29 Crores. CSR Cost Rs. 5 per Tonne. R&R Cost 19.525 Crores. Environmental Management Cost (capital cost Rs.(Direct 1.42 Crores and Indirect 8.50 Crs), Revenue cost Rs. 18/Ton).
- xxi. **Water body:** No river / Nallah flowing near or adjacent to the proposed mine.
- xxii. **Approvals:** Ground water clearance shall be obtained. Board's approval: Feasibility report has been approved by the Board vide Minute No 499:5:10 of Board of Directors meeting held on 1.11.2010. Mining plan has been approved vide Lr No 13016/1/2012-CA-II dated 21st March, 2014. Mine closure plan is an integral part of mining plan.
- xxiii. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
- xxiv. **Forestry issues:** Total forest area involved 285.44 ha for mining. Applied for forest clearance. Regional office inspection completed and the application is forwarded to 'The Inspector General of Forests, GoI, MoEF, New Delhi vide Lr No 2373/FOR.I(1)/2014 dt 28.04.2014. Awaiting for FAC meeting.
- xxv. Total **afforestation** plan shall be implemented covering an area of 272.45 ha at the end of mining. Green Belt over an area of 50.62 ha. Density of tree plantation 2500 trees/ ha of plants.
- xxvi. There are no **court cases/violation** pending with the project proponent.

3. The Expert Appraisal Committee (EAC) has considered the proposal in its 21st EAC held during 18th -19th September, 2014 and recommended for the TOR with the following specific TORs in addition to generic TORs for opencast coal mine and with general conditions for preparation of the Environmental Impact Assessment (EIA) Report and Environment Management Plan (EMP) in respect of the **Kistaram Opencast Project of (2.00 MTPA in ML area of 435.68 Ha; Latitude 17° 13' 14" to 17° 13' 57" and Longitude 80° 46' 55" to 80° 47' 28") M/s The Singareni Collieries co. Limited, located at dist. Khammam, Telangana:**

- i. Ensure water quality is maintained for drinking purpose.
- ii. The mine void should be used for pisciculture purpose.
- iii. The external OBD should be rehandled to the maximum and should be grown with the native species.

4. GENERIC TOR FOR AN OPENCAST COALMINE PROJECT

- (i) An EIA-EMP Report would be prepared for ??.. **MTPA** rated capacity in an ML/project area of ??ha based on the generic structure specified in Appendix III of the EIA Notification 2006.
- (ii) An EIA-EMP Report would be prepared for ??. MTPA rated capacity cover the impacts and management plan for the project specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of data and information. generation of data on impacts including prediction modelling for ???.. **MTPA** of coal

production based on approval of project/Mining Plan for ???MTPA. Baseline data collection can be for any season except monsoon.

- (iii) A map specifying locations of the State, District and Project location.
- (iv) A Study area map of the core zone and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage of rivers/streams/nalas/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km area of the buffer zone should be given.
- (v) Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note of the land use. Satellite imagery per se is not required.
- (vi) Map showing the core zone delineating the agricultural land (irrigated and unirrigated, uncultivable land (as defined in the revenue records), forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
- (vii) A contour map showing the area drainage of the core zone and 2-5 km of the buffer zone (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated as a separate map.
- (viii) A detailed Site plan of the mine showing the various proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area and if any, in topography such as existing roads, drains/natural water bodies are to be left undisturbed along with any natural drainage adjoining the lease /project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc.
- (ix) In case of any proposed diversion of nallah/canal/river, the proposed route of diversion/modification of drainage and their realignment, construction of embankment etc. should also be shown on the map.
- (x) Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown.
- (xi) Break up of lease/project area as per different land uses and their stage of acquisition.

LANDUSE DETAILS FOR OPENCAST PROJECT

S.N.	LANDUSE	Within ML Area (ha)	Outside ML Area (ha)	TOTAL
1.	Agricultural land			
2.	Forest land			
3.	Wasteland			
4.	Grazing land			
5.	Surface water bodies			
6.	Settlements			
7.	Others (specify)			
	TOTAL			

- (xii) Break-up of lease/project area as per mining operations.
- (xiii) Impact of changes in the land use due to the start of the projects if much of the land being acquired is agricultural land/forestland/grazing land.
- (xiv) Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (PM₁₀, PM_{2.5}, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and

groundwater), soil along with one-season met data coinciding with the same season for AAQ collection period.

- (xv) Map of the study area (1: 50, 000 scale) (core and buffer zone clearly delineating the location of various stations superimposed with location of habitats, other industries/mines, polluting sources. The number and location of the stations in both core zone and buffer zone should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Values should be provided based on desirable limits.
- (xvi) Study on the existing flora and fauna in the study area (10km) carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I fauna, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a comprehensive Conservation Plan should be prepared and submitted with EIA-EMP Report and comments from the CWLW of the State Govt. also obtained and furnished.
- (xvii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures.
- (xviii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of that technology and equipment proposed to be used vis-à-vis the potential impacts.
- (xix) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xx) Detailed water balance should be provided. The break up of water requirement for the various mine operations should be given separately.
- (xxi) Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users.
- (xxii) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term modelling studies on. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xxiii) Impact of blasting, noise and vibrations.
- (xxiv) Impacts of mining on the AAQ, predictive modelling using the ISCST-3 (Revised) or latest model.
- (xxv) Impacts of mineral transportation within and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop, management plan for maintenance of HEMM, machinery, equipment. Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities.
- (xxvi) Details of waste generation (OB, topsoil) as per the approved calendar programme, and their management shown in figures as well explanatory chapter with tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use. OB dump heights and terracing should be based on slope stability

studies with a max of 28° angle as the ultimate slope. Sections of dumps (ultimate) (both longitudinal and cross section) with relation to the adjacent area should be shown.

- (xxvii) Progressive Green belt and afforestation plan (both in text, figures as well as in tables prepared by MoEF&CC) and selection of species (local) for the afforestation/plantation programme based on original survey/land use.

Table 1: Stage-wise Land use and Reclamation Area (ha)

S.N.	Land use Category	Present (1 st Year)	5 th Year	10 th Year	20 th year	24 th Year (end of Mine life)*
1.	Backfilled Area(Reclaimed with plantation)					
2.	Excavated Area (not reclaimed)/void					
3.	External OB dump Reclaimed with plantation)					
4.	Reclaimed Top soil dump					
5.	Green Built Area					
6.	Undisturbed area (brought under plantation)					
7.	Roads (avenue plantation)					
8.	Area around buildings and Infrastructure					
	TOTAL	110*	110*	110*	110*	110*

* As a representative example

Table 2: Stage-wise Cumulative Plantation

S.N.	YEAR*	Green Belt		External Dump		Backfilled Area		Others (Undisturbed Area/etc)		TOTAL	
		Area (ha)	No. of trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees
1.	1 st year										
2.	3 rd year										
3.	5 th year										
4.	10 th year										
5.	15 th year										
6.	20 th year										
7.	25 th year										
8.	30 th year										
9.	34 th year (end of mine life)										
10.	34-37 th Year (Post-mining)									85	

* As a representative example

- (xxviii) Conceptual Final Mine Closure Plan, post mining land use and restoration of land/habitat to pre- mining. A Plan for the ecological restoration of the area post mining and for land use should be prepared with detailed cost provisions. Impact and management of wastes and issues

of rehandling (wherever applicable) and backfilling and progressive mine closure and reclamation.

Table 3: Post-Mining Land use Pattern of ML/Project Area (ha)

S.N.	Land use during Mining	Land Use (ha)				
		Plantation	Water Body	Public Use	Undisturbed	TOTAL
1.	External OB Dump					
2.	Top soil Dump					
3.	Excavation					
4.	Roads					
4.	Built up area					
5.	Green Belt					
6.	Undisturbed Area					
	TOTAL	85				110

- (xxix) Flow chart of water balance. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. Details of STP in colony and ETP in mine. Recycling of water to the max. possible extent.
- (xxx) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine.
- (xxxi) Risk Assessment and Disaster Preparedness and Management Plan.
- (xxxii) Integrating in the Env. Management Plan with measures for minimising use of natural resources - water, land, energy, etc.
- (xxxiii) Including cost of EMP (capital and recurring) in the project cost and for progressive and final mine closure plan.
- (xxxiv) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan.
- (xxxv) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project.
- (xxxvi) Public Hearing should cover the details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made by the proponent should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
- (xxxvii) In built mechanism of self-monitoring of compliance of environmental regulations.
- (xxxviii) Status of any litigations/ court cases filed/pending on the project.
- (xxxix) Submission of sample test analysis of:
Characteristics of coal - this includes grade of coal and other characteristics ?ash, S and heavy metals including levels of Hg, As, Pb, Cr etc.
- (xl) Copy of clearances/approvals ? such as Forestry clearances, Mining Plan Approval, NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

(A) FORESTRY CLEARANCE

TOTAL ML/PROJECT	TOTAL FORESTLAND	Date of FC	Extent of forestland	Balance area for which FC is yet to	Status of appl. for
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AREA (ha)	(ha)			be obtained	diversion of forestland
		If more than one, provide details of each FC			

Copies of forestry clearance letters (all, if there are more than one)

(A) MINING PLAN APPROVAL

(B) MINING PLAN/PROJECT APPROVAL

Date of Approval of Mining Plan/Project Approval:

Copy of Letter of Approval of Mining Plan/Project Approval

(xli) Corporate Environment Responsibility:

- a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
- b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
- c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
- d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

5. The following general points should be noted:

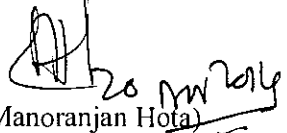
- i. All documents should be properly indexed, page numbered.
- ii. Period/date of data collection should be clearly indicated.
- iii. Authenticated English translation of all material provided in Regional languages.
- iv. After the preparation of the draft EIA-EMP Report as per the aforesaid TOR, the proponent shall get the Public Hearing conducted as prescribed in the EIA Notification 2006 and take necessary action for obtaining environmental clearance under the provisions of the EIA Notification 2006.
- v. The letter/application for EC should quote the MoEF&CC file No. and also attach a copy of the letter prescribing the TOR.
- vi. The copy of the letter received from the Ministry on the TOR prescribed for the project should be attached as an annexure to the final EIA-EMP Report.
- vii. The final EIA-EMP report submitted to the Ministry must incorporate the issues in TOR and that raised in Public Hearing. The index of the final EIA-EMP report, must indicate the specific chapter and page no. of the EIA-EMP Report where the specific TOR prescribed by Ministry and the issue raised in the P.H. have been incorporated. Mining Questionnaire (posted on MoEF&CC website) with all sections duly filled in shall also be submitted at the time of applying for EC.
- viii. General Instructions for the preparation and presentation before the EAC of TOR/EC projects of Coal Sector should be incorporated/followed.
- ix. The aforesaid TOR has a validity of two years only.
- x. Grant of TOR does not necessarily mean grant of EC.

- xi. Grant of TOR/EC to the present project does not necessarily mean grant of TOR/EC to the captive/linked project.
- xii. Grant of TOR/EC to the present project does not necessarily mean grant of approvals in other regulations such as the Forest (Conservation) Act 1980 or the Wildlife (Protection) Act, 1972.
- xiii. Grant of EC is also subject to Circulars issued under the EIA Notification 2006, which are available on the MoEF&CC website: www.envfor.nic.in

6. You are required to submit the final EIA/EMP prepared as per TORs to the Ministry for considering the proposal for environmental clearance within 2 years as per the MoEF O.M. No. J-11013/41/2006-IA. II (I) dated 22nd March, 2010.

7. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India / National Accreditation Board of Education and Training (QCI/NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other Organization(s)/Laboratories including their status of approvals etc. vide notification of the MoEF dated 19th July, 2013

Yours faithfully,


(Dr. Manoranjan Hota)
Director

**Copy to: Member Secretary, Andhra Pradesh State Pollution Control Board, Paryavaran Bhawan,
A-3 Industrial Estate, Sanatnagar, Hyderabad – 500038.**